

WE CLAIM:

1. A method of making a hardened steel part of complex shape from a workpiece, the method comprising the step of sequentially:

a) heating the workpiece to an annealing temperature;
b) while the workpiece is still at the annealing temperature, rapidly deforming the workpiece with a machine into an intermediate shape;

c) moving the deformed workpiece from the machine to a press while maintaining it at the annealing temperature; and

d) while the workpiece is still at the annealing temperature, deforming the workpiece in the press to the complex shape and then holding the workpiece in the press to harden it.

2. The method defined in claim 1, comprising the step of

minimizing contact in step b) between a deforming tool and the workpiece to reduce cooling of the workpiece.

3. The method defined in claim 1 wherein in step b) the workpiece is deformed by engagement with a heated tool of the machine.

4. The method defined in claim 1, further comprising the step of

b') heating the workpiece during step c).

6. The method defined in claim 5 wherein the workpiece is heated in step b') by blowing hot gas on it.

7. The method defined in claim 5 wherein the workpiece is heated in step b') by radiating heat on it.

8. The method defined in claim 1, further comprising the step of

surrounding the workpiece during steps a) through d) with an atmosphere of inert gas.

9. The method defined in claim 1, further comprising before step a), the step of

applying a coating of a protective metal to the workpiece.